by which the eye is enabled to adjust itself for distance, are inconsistent with the anatomy of the organ, and expresses the belief, which can scarcely be considered novel, that this phenomenon will be found to be "explicable by the simple law of optical science which requires nothing more than a change in the relative position of the lens and retina to accommodate the sight to near and distant objects."

COCCIUS (*Der Mechanisums der Accommodation des menschlichen Auges nach Beobachtungen im Leben.* 8vo. pp. 153, Leipsic, 1868) has made a number of observations on the mechanism of accommodation in the human eye by examining during life the eyes of those who had iridectomy performed upon them. He observed that when the accommodation of the eye is altered from that for a distant to that for a near object, the ciliary processes advance and become somewhat larger; the zonule becomes broader; and the dark band which represents the border of the lens becomes broader and darker. Atropia occasions a decided retraction, Calabar bean, a decided advance of the ciliary processes. He thinks that the cause of these changes can only be found in the action of the ciliary muscle. He thinks that the ciliary muscle cannot have a fixed point anywhere but anteriorly near the canal of Schlemm, else the ciliary processes could not be drawn forward. He thinks that the lateral swelling of these is due to compression of their veins by the contracting muscle. The increased curvature of the lens during positive accommodation (accommodation for near objects) is, according to him, not only due to the traction exercised by the ciliary muscle, but also to pressure.

Helmholtz's theory is that during negative accommodation the lens is kept flat by the elasticity of the zonule, and that during positive accommodation the ciliary muscle counteracts the action of the zonule, and the lens becomes more convex by the action of its own elasticity. In opposition to this, Coccius adduces the fact that the transition from accommodation for distant to that for near objects, takes place more rapidly than the inverse movement does. He thinks that this fact does not favour the idea that the elasticity of the zonule is greater than that of the lens, but that the lens returns to its somewhat flattened form during negative accommodation by reason of its own elasticity. (From an abstract in the *Centralblatt*, Nos. 31 and 32, 1868.)

On the other hand, Hensen and Völckers (*Experimental untersuchung über den Mechanismus der Accommodation.* 8vo. pp. 56, Kiel, 1868), from numerous experiments on the eyes of dogs and pigs, support Helmholtz's theory of accommodation.—*Journ. Anat. and Phys.*, Nov. 1868.

60. *Sympathetic Ophthalmia and its Treatment by Division of the Ciliary Nerves.*—By. Dr. ED. MEYER.—On investigating the numerous published cases of this affection, it appears that in more than one-half of the cases the wounded eye contained a foreign body; of the other half, two-thirds were cases of penetrating wounds; and one-third, of simple contusion. It is comparatively rare to see this affection follow an operation. One also sees this affection where an atrophic globe is the seat of recurrent inflammations, or of calcareous degeneration giving rise to irritation. It seldom occurs in children, generally in persons of feeble constitution, and often after prolonged exercise of the healthy eye.

Two hypotheses have been advanced to explain the propagation of diseased action from the one eye to the other. The one attributes it to the optic nerve and its decussation with its neighbour, the other to the ciliary nerves. The author is inclined to accept both hypotheses, but considers the latter to be the more frequent.

He considers three forms of sympathetic ophthalmia. The most dangerous form is known as malignant iritis or irido-cyclitis. The symptoms appear some days, weeks, sometimes months, after the injury, and are those of iritis with rapid effusion of lymph gluing the margin of the iris to the capsule of the lens. The iris becomes bulged forwards in its centre towards the inner surface of the cornea; there is great tenderness on pressure over the ciliary region, the tension of the eye becomes diminished, and vision impaired, leading to complete blindness.

The treatment consists in the early enucleation of the injured eye. Iridectomy does not appear to be of any service.

The second form of sympathetic ophthalmia is the ordinary serous iritis (aquocapsulitis). This form, though very obstinate, does not appear to lead to irido-cyclitis; the vitreous humour generally remains intact, and it is in this form that the enucleation of the injured eye is attended with the best results.

The third form, and the mildest, is that to which the term sympathetic neuroses has been well applied. It is characterized, above all, by considerable photophobia with consecutive spasm of the orbicularis, lachrymation, slight circum-corneal injection manifested upon the slightest visual effort, feebleness of vision and deficient power of accommodation. A typical case of this form is narrated in which the patient, being of excessively nervous temperament and worn-out by suffering, declined to submit to enucleation, and where Dr. Meyer had recourse to an operation—suggested by Von Graefe, but not previously employed either by him or others—viz., division of the ciliary nerves, with the best results; the photophobia and irritability ceased entirely, and visual power returned. In this case the primary lesion was an iridectomy, in the performance of which a portion of iris remained impacted between the lips of the wound in the ciliary region; this gave rise to ciliary irritation, leading to sympathetic neuroses. In two other cases he has employed this operation with the best effect. In the one case, a burn from lime was the original injury; in the other, a wound with scissors, involving the cornea, iris, and ciliary region. After the operation, tenderness in the ciliary region completely disappeared.

The following is the method of operating: Having found the region tender to the touch, a fold of conjunctiva is pinched up at the corresponding margin of the cornea, and incised (as for the operation of strabismus), and the cellular tissue uniting the conjunctiva divided to the extent and in the direction required by the plan of operation. A strabismus hook is then passed under the tendon of the nearest muscle so as to fix the eye. The hook being held in the left hand, a puncture is made through the sclerotic in the ciliary region obliquely to the surface, with Von Graefe's narrow knife, in the same manner as for extraction. Counter-puncture is effected, and the section completed, whereby a linear incision is obtained parallel to the margin of the cornea, at which vitreous humour at once presents itself. The hook is carefully removed, and the lips of the conjunctival wound brought together by a suture. Several days elapse ere the wound in the sclerotic heals. Little reaction follows the operation, and no further treatment is required than rest, subcutaneous injection of morphia into the temple, and, where there is pain and restlessness, the application of a pressure bandage.

Of the three eyes operated on, one, which had commenced to shrink before the operation, is completely atrophied since; the other two have preserved their normal shape.—*Edin. Med. Journ.*, Nov. 1868, from *Annales d'Oculistique*, tome lviii.

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61. *Sympathetic Ophthalmia cured by Neurotomy.*—Sympathetic ophthalmia is undoubtedly one of the most dangerous forms of inflammation of the eye, and it has been considered that but one desperate remedy existed to check it, namely, the removal of the primarily injured eyeball—an operation Mr. J. Z. LAURENCE designates (*Lancet*, Nov. 14, 1868) as "severe, bloody, and disfiguring to the patient—an operation only admissible from the known funestral consequences to the sympathetically affected eye if we allowed the injured one to remain.

"After it was established that sympathetic ophthalmia consisted in propagated *cyclitis*, Dr. E. Meyer, of Paris [see preceding article], on a suggestion of Professor von Graefe, in three cases succeeded in curing the sympathetic ophthalmia by *dividing the ciliary nerves* of the primarily affected eye. He has been followed by Professor Secondi, of Genoa; and now I have the honour to lay before the profession a fifth successful case.

"T. S——, aged twenty, was admitted into St. Bartholomew's Hospital,